

An optical network unit of each consumer is connected to an optical line terminator of a network operator through a subscriber line formed of an optical fiber. When a particular consumer desires to download digital content from a content retailer to the particular consumer through a network of the network operator, the particular consumer requests a bandwidth reservation of a resource reservation server of the network operator, so that a transmission condition composed of a bandwidth and a time zone is reserved in cases where the downloading of the digital content at the transmission condition is possible. Thereafter, the bandwidth reservation is sent to a downward bandwidth managing unit, and the digital content is downloaded from the content retailer to the particular consumer through the network of the network operator at the transmission condition according to the bandwidth reservation under control of the downward bandwidth managing unit. Accordingly, a time period required for the downloading of the digital content can be easily predicted, and an operational efficiency of the downloading can be improved.

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